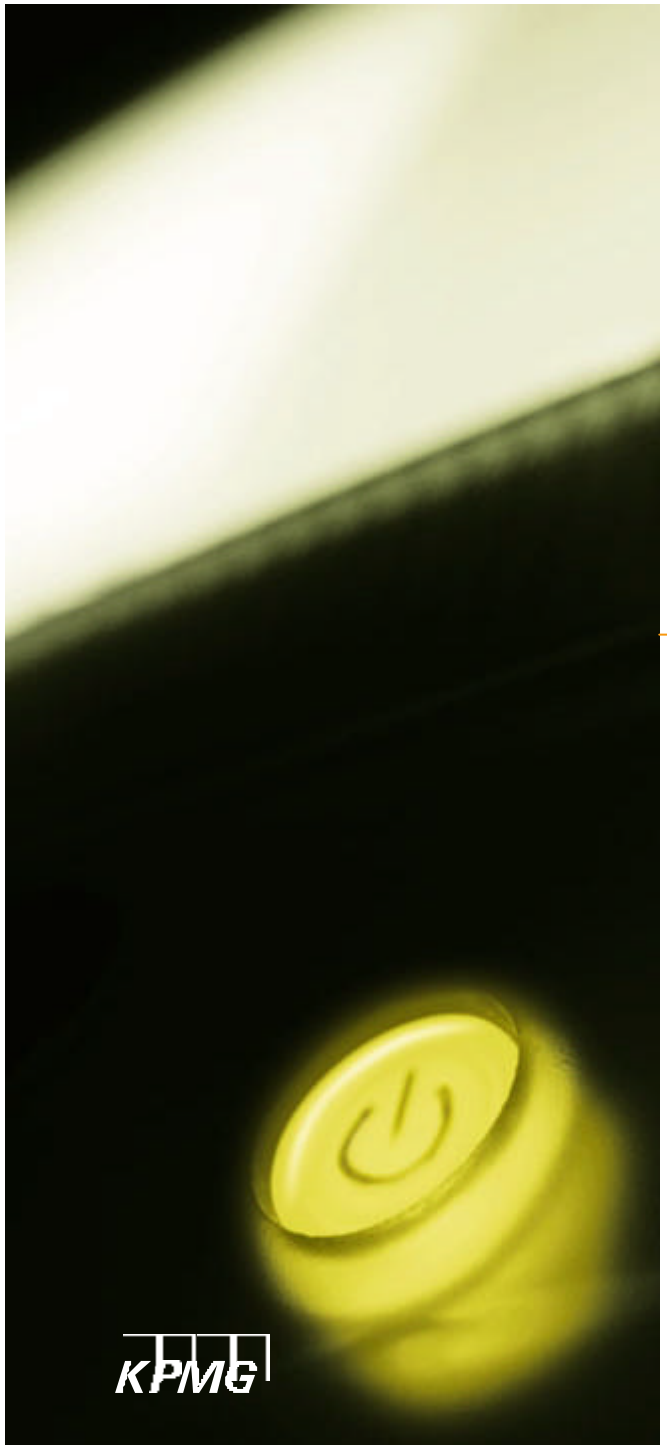

e-Testing

ISACA Presentation

24 January 2002

By Angus Wright

KPMG

Information Risk Management

Financial Services

e-Testing

- Good testing characteristics
- e-Testing distinction
- Key aspects of e-Testing
- Testing deliverables
- Summary
- Q & A

It's all in the ***Planning*** and ***Preparation***

Good testing characteristics

- *Reproducible Tests/Results*
- *Inclusion of business subject matter experts*
- *Understanding the different types of testing and their purpose*
- *Testing parallels the design process*

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e-Testing distinction

e-Testing differs from other testing in the following ways:

- Combination of platforms
- Numbers of components from numbers of vendors
- Free navigation
- Shortened development timeframes
- Untrained users
- Iterative developments

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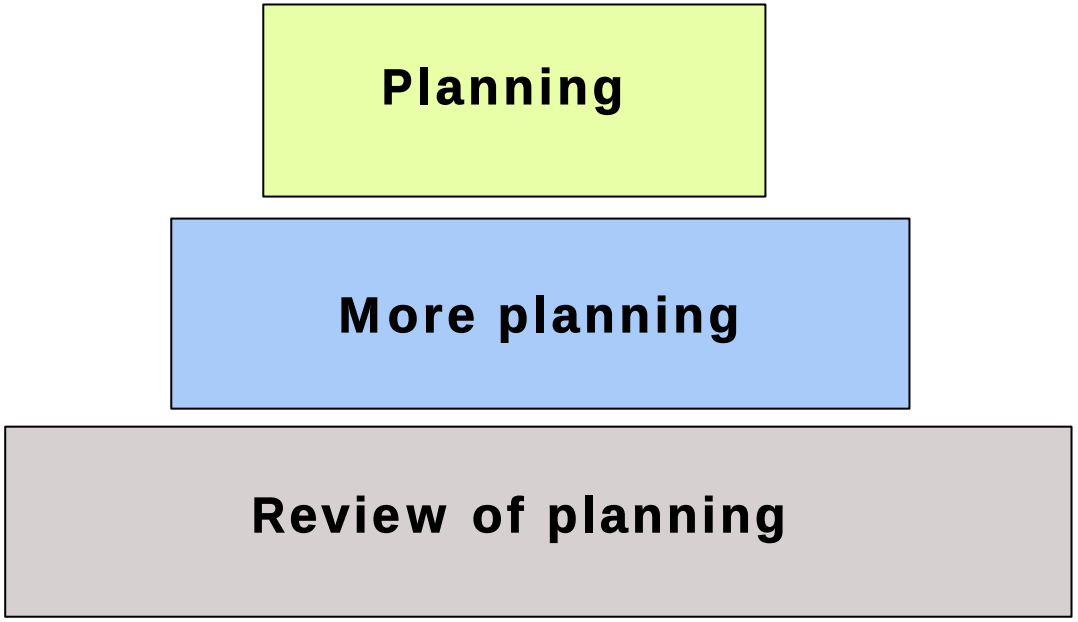
Key aspects of eTesting



Key planning documents like the 'Testing Strategy' need to be regularly reviewed and updated accordingly

Key aspects -
levels and types of testing

- Needs to be agreed at the beginning of the project.

BUSINESS RISK

High

- **Unit**
- **Sub-system**
- **System**
- **UAT**
- **Parallel**

Low

- **Unit**
- **System**
- **UAT**

Key aspects -
primary & special test types

There are three major types of primary testing, they are:

- ***Functional***
- ***Performance/Scalability/Reliability***
- ***Security (Intrusion/Denial of Service)***

Special tests are more time dependent and are generally a combination of the primary test types:

- ***System Integration/End-to-End***
- ***User Acceptance Testing***
- ***Installation Readiness***

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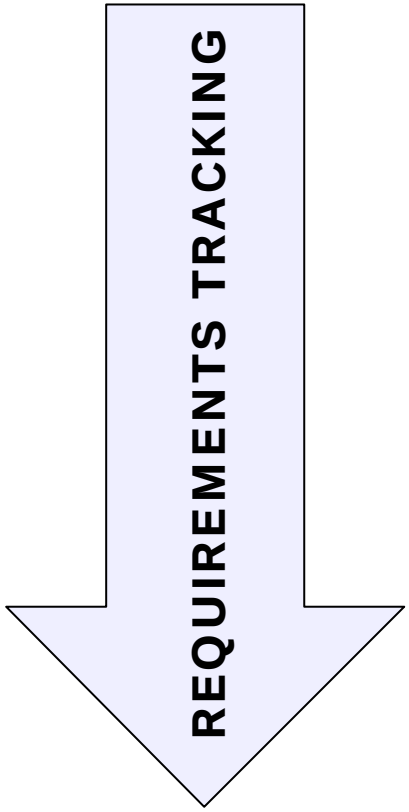
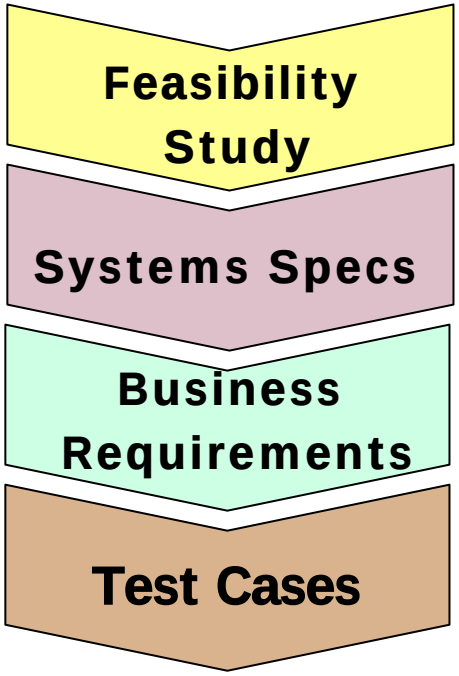
Key aspects -
requirements traceability

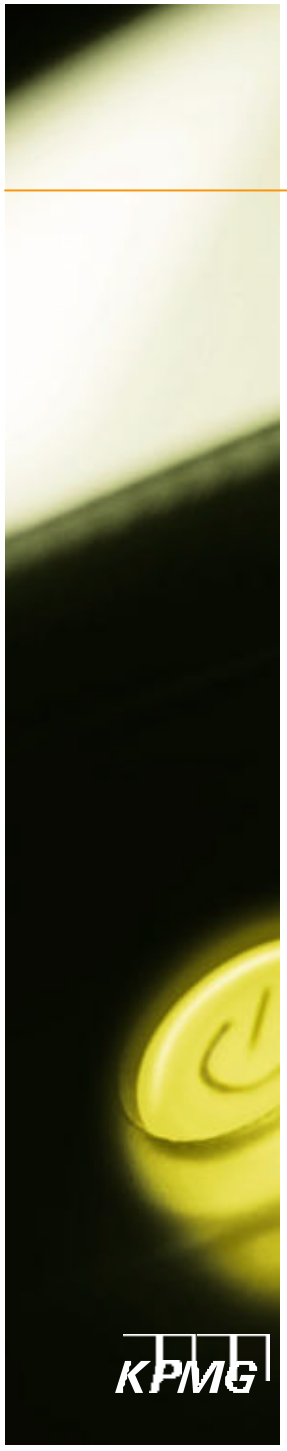


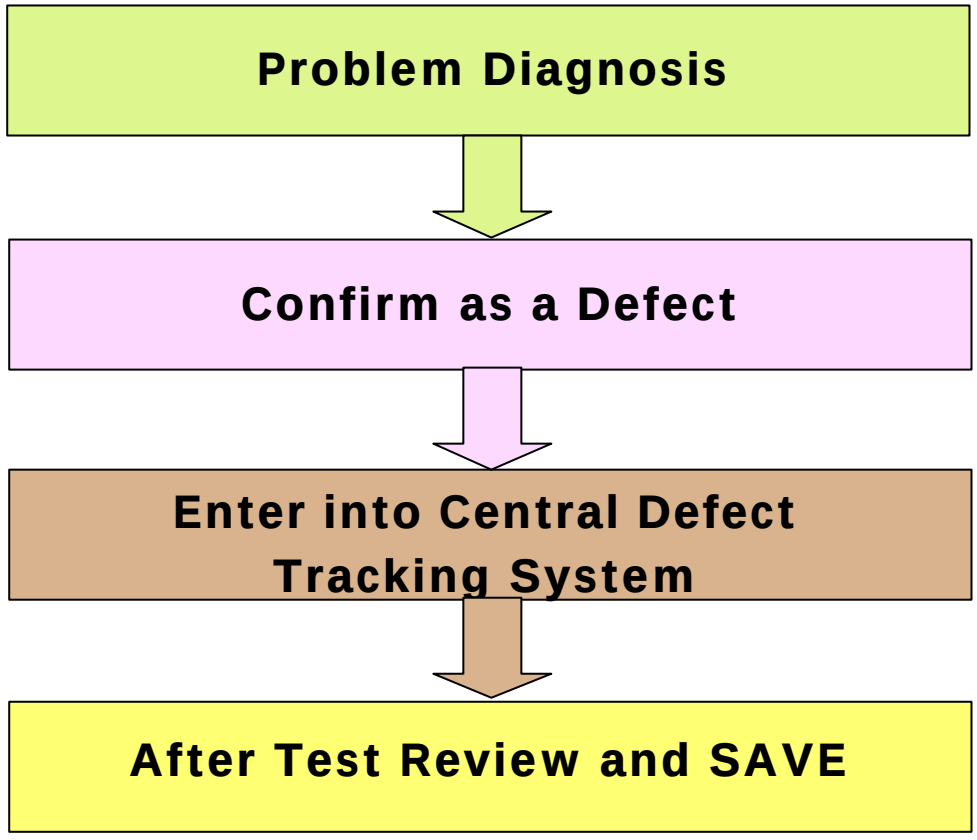


Key aspects –
setting up a test environment

- Things that can go wrong, and its often caused by lack of control over a variable.
- Planning ahead for the creation of test environments cannot be underesti mated.
- Complex testing situations, to need as much as a 4 - 6 week lead time.

Key aspects -
Dealing with Defects





Key aspects -
regression validation

Effective regression testing should be:

- ***Repeatable***
- ***Automated***
- ***Coverage***
- ***Well documented***
- ***Records results***

Testing deliverables

- Test environment
- Test plans & scripts
  - Test strategy
  - Test plan
  - Test cases/scenarios
  - Test scripts
  - Data validation
- Acceptance criteria
- Production migration
- Test results
  - Actual tests
  - Test output
  - Defect analysis

Test environment

The test environment is dependent on the test strategy, as a minimum you would expect to see environments for:

- ***Development;***
- ***Testing;***
- ***User Acceptance; and***
- ***Staging for production.***

These environments need to be defined and made available to the development and test teams in order to properly manage testing.

Test plans and scripts – strategy

This deliverable includes the following:

Test Strategy

The test strategy provides an insight as to how the testing will be performed. In general the following areas should be covered in a test strategy:

- ***Objectives***
- ***Scope of testing***
- ***Organisation/Roles/Responsibilities***
- ***Test Environment/Test Tools***
- ***Approach***
- ***Metrics***
- ***Risks and Contingencies***
- ***Sign Off***

Test plans and scripts – plans

Test Plan - Test plans follow from the Strategy. Different test plans should exist for different types of testing.

Test plans should include :

- ***Purpose***
- ***Scope***
- ***Prerequisites***
- ***Roles and Responsibilities***
- ***Approach***
- ***Completion Criteria***
- ***Sign Off Process***
- ***Test Project Plan***
- ***Defect Management***

Test plans and scripts – cases/scenerios

Remember you are testing for:

- Successful completion of acceptable transactions;
- Successful handling of unacceptable transactions;
- Adequate performance;
- Proper security;
- Proper application/system controls; and
- Proper back up recovery.

Test plans and scripts

Test Scripts

As a minimum test script should include:

- Objectives
- Inputs and outputs;
- Sequence of test cases to be exercised and expected results;
- Places for documenting the results of individual steps;
- Areas to note variances and expected responses; and
- Summary of results.

Data Validation Matrix

- Addresses batch aspects and underlying data issues;
- Verifies data collected is consistent with expectation (e.g. post codes are correct for the cities);
- Verify data conversions, where values are transformed as they are entered into the new application or system.

Acceptance criteria

Acceptance criteria should be defined in the planning process

- It should include identifying criteria that will define the application or system as ready for release for the next stage of testing or to production;
- The criteria should be supported by test cases and scenarios that will help the actual tests to be accomplished.

Production migration

- This is special testing that is executed prior to the migration of the application or system to its final environment.
- Its purpose is to verify that the production environment is ready to support the application or system within the operating parameters expected.

Test results – outputs

Test Outputs

- After testing is complete, all actual results are compared to expected results;
- Variances are identified and reviewed for reasons and follow-up actions;
- Metrics are updated;
- Plans are reviewed and if necessary revised to compensate for the results.

Summary

Planning

More planning

Review of planning

KPMG contacts

For more information on testing and how KPMG can assist, then please contact either:

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